

WHAT IS CLAIMED IS:

1. A method of releasing a protein of interest from host cells comprising

a. suspending the host cells in a buffer, and

5 b. adding a detergent to the suspended host cells

wherein the detergent is an amphipathic charged amine or an amphipathic charged amine oxide, and wherein the detergent is in a concentrated form of at 3 times the desired final concentration of the detergent after dilution in the buffer of step a.

10 2. A method of releasing a protein of interest from host cells comprising

a. suspending the host cells in a buffer, and

15 b. adding a detergent to the suspended host cells,

wherein the detergent is selected from the group consisting of: tributylphosphate, dimethyldecylamine,

dimethyltridecylamine, dimethylundecylamine,

dimethyldidecylamine, dimethyltetradecylamine,

20 dimethylhexadecylamine, dimethyldecylamineoxide,

dimethylundecylamineoxide, dimethyldidecylamineoxide,

dimethyltetradecylamineoxide and dimethyltridecylamineoxide,

25 and wherein the detergent is in a concentrated form of at 3 times the desired final concentration of the detergent after dilution in the buffer of step a.

3. The method of claim 1 or 2, wherein the detergent
is not dimethyltridecylamine.

5 4. The method of claim 3, further comprising the step
of adding glycerol to the suspended host cells, and wherein
the glycerol is in a concentrated form of at 3 times the
desired final concentration of the glycerol after dilution
in the buffer of step a.

10 5. The method of claim 4, wherein the detergent
comprises a final concentration of between 0.01 to 10
percent.

15 6. The method of claim 4, wherein the glycerol
comprises a final concentration of between 0.6 to 15
percent.

20 7. The method of claim 5, wherein the glycerol
comprises a final concentration of between 0.6 to 6 percent.

8. The method of claim 1, wherein the detergent added
is a pure detergent.

25 9. The method of claim 1, wherein the host cells are
at least 1 kg in weight.

10. The method of claim 1, wherein the host cells are
Pichia pastoris cells.

5 11. The method of claim 1, wherein the buffer has an
ionic strength of less than 350 mM and at least 1 mM.

10 12. The method of claim 1, further comprising the step
of incubating the cell and detergent mixture from 90 minutes
to 24 hours.

15 13. The method of claim 12, wherein the incubation is
from 8 hours to 24 hours.

14. The method of claim 1, further comprising the step
of incubating the cell and detergent mixture at a
temperature of between about 3°C and about 10°C.

3. The method of claim 1, wherein the detergent is not dimethyltridecylamine.

4. The method of claim 3, further comprising the step 5 of adding glycerol to the suspended host cells, and wherein the glycerol is in a concentrated form of at 3 times the desired final concentration of the glycerol after dilution in the buffer of step a.

10 5. The method of claim 4, wherein the detergent comprises a final concentration of between 0.01 to 10 percent.

15 6. The method of claim 4, wherein the glycerol comprises a final concentration of between 0.6 to 15 percent.

7. The method of claim 5, wherein the glycerol comprises a final concentration of between 0.6 to 6 percent.

20 8. The method of claim 1, wherein the detergent added is a pure detergent.

25 9. The method of claim 1, wherein the host cells are at least 1 kg in weight.

10. The method of claim 1, wherein the host cells are *Pichia pastoris* cells.

5 11. The method of claim 1, wherein the buffer has an ionic strength of less than 350 mM and at least 1 mM.

10 12. The method of claim 1, further comprising the step of incubating the cell and detergent mixture from 90 minutes to 24 hours.

15 13. The method of claim 12, wherein the incubation is from 8 hours to 24 hours.

14. The method of claim 1, further comprising the step of incubating the cell and detergent mixture at a temperature of between about 3°C and about 10°C.